

# ABSTRACT

Methods, systems and processes for providing efficient, accurate and exact image reconstruction using portable and easy to use C-arm scanning devices and rotating gantries, and the like. The invention can provide exact convolution-based filtered back  
5 projection (FBP) image reconstruction by combining a curved scan of the object and a line scan of the object. The curved scan can be done before or after the line scan. The curved scan can be less than or greater than a full circle about an object being scanned.